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NATURE STUDIES

With Observations on the Natural History of Newfoundland

By

JAMES P. HOWLEY, F.G.S.

Read before the Daughters of the Empire, February 24th, 1913, in the British Hall :: ::

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NATURAL HISTORY

It is not my intention to-night to go very fully into the question of Natural History as a whole, even were I competent to do so. The subject is one of so vast and so far reaching a character that few scientists are able to grasp a full knowledge of its various branches.

I merely intend to tell you a little of what I have gathered regarding the Natural History of our own Island, about which, I regret to say, there is a great lack of information of a really reliable and scientific character. It is then with a view of trying to create an interest in nature studies amongst all classes, but especially those who may have means and leisure to devote thereto, that I have taken up this subject.

There are few civilized countries now-a-days, where so little has been done to study out their fauna and flora as in Newfoundland, and it is in the hope of directing more attention to this interesting and really important phase of our Country's Natural productions that I have selected Natural History for my theme.

I think it is almost deplorable that an effort has not been made in our schools to teach the rising generation something of this useful and pleasure giving branch of knowledge.

Nearly everyone can contribute something towards our knowledge on this head if so inclined, and I feel confident that any persons who would devote their attention to collecting and arranging specimens

during the summer season, would derive an amount of pleasure from the pursuit, little dreamed of by those who have never given it a thought.

Natural History properly defined is the study and classification of "the various organisms, habits, or instincts of the manifold animal and vegetable productions existing on the surface of the earth, and the waters beneath the earth." In fact all the laws by which nature is governed come under this head. According to Pliny the Elder, "Natural history is the physical description of the world."

To learn all that there is to be learned about any country, more especially that which we inhabit, and which most of us call home, should be the aim of every well informed person.

Of course it cannot be expected that any one individual should become fully acquainted with every branch of this enchanting science; that would be too much to expect. Still there are a great many who could aid in some way to increase our knowledge of the Natural history of our island, of which we really know so very little at present.

Many persons are inclined to regard such studies as mere fads, or little better than waste of time, yet they have their utilitarian aspect, and were everyone all the world over, to regard them in the above light, the world would be the loser to a very great extent.

Doubtless many of us have felt somewhat chagrined at times when questioned by intelligent strangers on matters pertaining to our fauna and flora, at our inability to give satisfactory answers, or even afford mere ordinary information, such as would be expected from an educated person.

In the beautiful words of the poet Wordsworth, you will find:

"To every natural form, rock, fruit, or flower,
E'en the loose stones that cover the highway,
I gave a mortal life; I saw them feel,
Or linked them with some feeling;
Add that whate'er of terror, or of love
Or beauty, Nature's daily face puts on,
From transitory passion, unto this
I was as sensitive as waters are
To the sky's influence in a kindred mood
Of passion; was obedient as a lute,
That waits upon the touches of the wind!

The great Baron Van Humboldt says, in his introduction to "Cosmos": "In reflecting upon the different degrees of enjoyment presented to us in the contemplation of nature, we find that the first place must be assigned to a sensation which is wholly independent of an intimate acquaintance with the physical phenomena presented to our view, or of the peculiar character of the region surrounding us. In the uniform plain bounded only by a distant horizon, where the lowly heather, the cistus, or waving grasses deck the soil; on the ocean shore, where the waves softly rippling over the beach, leave a track, green with the weeds of the sea; everywhere the mind is penetrated by the same sense of the grandeur and vast expanse of nature revealing to the soul, by a mysterious inspiration, the existence of laws that regulate the forces of the universe. Mere communion with nature, mere contact with the free air, exercise a soothing yet strengthening influence on the wearied spirit, calm the storm of passion, and soften the heart when shaken by sorrow to its inmost depths. Everywhere, in every region of the globe, in every stage of intellectual culture, the same sources of enjoyment are vouchsafed to man. The earnest and solemn thoughts awakened by a communion with nature intuitively arise from a presentment of the order and harmony pervading the whole universe, and from the contrast we draw between the narrow limits of our own exist-

ence, and the image of infinity revealed on every side, whether we look upwards to the starry vault of heaven, scan the far-stretching plain before us, or seek to trace the dim horizon across the vast expanse of ocean."

If we can only be induced to look into the inviting face of Nature with an enquiring eye, she will surely not fail to answer, but will reward the inquirer by leading on imperceptibly, from one wonder to another, as she reveals herself in her manifold and mysterious beauties. To the gentler sex in particular, I would say: Devote your leisure moments, above all to the floral beauties of the field or forest, or the wonderful products of the sea-shore, bearing in mind the old and well known words of the Evangelist:

"Consider the lilies of the field how they grow! They toil not, neither do they spin; and yet I say to you, that not even Solomon, in all his glory, was arrayed as one of these!"

If we take that branch of Natural History termed Botany alone, which as you know treats of the vegetable organisms of the earth. It is one of the most fascinating and interesting studies any one could choose. It affords its devotees infinite pleasure, bringing them, as it were, into close communion with Nature itself, in one of its most beautiful aspects. A collection of our wild flowers, fruits, mosses, lichens, etc., properly arranged and classified would add much to our knowledge on this head. Very little has been done so far to enlighten the world upon what Newfoundland has to offer in this respect.

I look upon Botany as a study peculiarly adapted to ladies of means and leisure Some who possess artistic skill would find much pleasure in depicting our wild flowers and fruits with the aid of the painter's brush.

Every country possesses something peculiar to itself in its vegetable growth, and it may be that Newfoundland will yet afford plants new to science, or perhaps possessing valuable medicinal or other as yet undiscovered properties. No doubt, any person who could bring to light something of this nature would attain much honour in scientific circles. Of course I need scarcely say that many of our most valuable drugs, dyes, etc., are derived from plant life.

Another branch of Natural History which might well engage the attention of some of our ladies is Algology, the study and collection of our seaweeds. This country affords ample opportunity along its surf beaten and much indented sea coast, for the collection of these most interesting of nature's treasures, erroneously termed seaweeds. There are many beautiful specimens to be found on our beaches in summer time, and when properly prepared they can be arranged in most artistic displays. I remember once seeing in a friend's house, a placque hanging on a wall, with a section of a flower basket attached thereto, in which were arranged several varieties of seaweed. It formed a very attractive wall ornament, and beneath were the beautiful lines of the Poet,

"Oh! call us not weeds, we are flowers of the sea,
For beautiful, bright and gay tinted are we,
Our blush is as deep as the rose of the bowers
Then call us not weeds, we are ocean's gay flowers.

Not nursed like the plants of a Summer's parterre
Whose gales are but sighs of an evening air.
Our exquisite, fragile and beautiful forms
Are nursed by the ocean and rocked by its storms."

Seaweeds so called, possess many useful and valuable properties especially for chemical and agricultural purposes. The common ordinary kelp found strewn around our shores, is the source from

whence most of the Iodine is obtained. It also contains a large percentage of Potash, so valuable as a fertilizer. An analysis of our Newfoundland kelp made a few years ago at the Imperial Institute Laboratory, South Kensington, while not proving so rich in Iodine, showed a much higher percentage of Potash than that of the British seas.

A recent American writer in "Current Literature Magazine," treating of this subject, estimates that there is untold wealth in the kelp or seaweed abounding on the coasts of this continent, especially in the large, coarse, variety, known scientifically as Nereocystus gigantea. He instances the fact, that at the present time America imports annually, from Germany, about $15,000,000 worth of Potash salts for fertilizing purposes, and that the coming 12 years will probably witness an expenditure, of at least $425,000,000 for this substance. It will thus be seen that from a commercial and utilitarian point of view, there is much wealth to be derived from the despised kelp or seaweed.

There are two other branches of Natural History which might perhaps engage the attention of some of our lady friends, namely: Conchology, or the science which treats of shells, corals, etc., and Entomology; the science of insect life, butterflies, beetles, and the like.

There is scarcely one amongst you my friends, who has it not in his or her power to contribute something, not in money, but in study and specimens, towards our knowledge of the natural history of this country. I feel assured that were a taste once cultivated for any particular branch of enquiry into natural science, it would prove a source of immeasurable enjoyment, and intellectual improvement.

A fairly wide field exists here in all these branches of Natural history to engage the attention of many

individuals, but so far very little has been bestowed upon them.

As all such subjects are rather out of my own line, I should greatly wish to see some intelligent persons take the matter up, and make as complete collections as possible, which when arranged and classified, should find a place in our Museum.

My own time, as you are aware, has been devoted chiefly to inanimate Nature, Geology and Mineralogy have been my chief lines of study, but I have also given much attention to the Zoology and Ornithology of our island. These have ever possessed a great attraction for me, though I could never devote to them the time necessary to make complete collections of all our animals and birds.

I therefore, make no pretense of knowing all there is to be learned about those most interesting subjects, yet, I have nevertheless acquired sufficient knowledge of them as far as Newfoundland is concerned, to be looked upon as an authority in such matters.

That branch especially which treats of the Ethnology of our country; the study of the manners, habits, customs, implements, ornaments, etc., of the aboriginal inhabitants, the ill-fated Beothucks, or Red Indians, has ever possessed an absorbing interest for me. During a long series of years, I have been collecting all possible information about this mysterious tribe of human beings, and the result of my investigations has been embodied in a book, now in the hands of the Cambridge University Press for publication. I will not anticipate this work by entering more fully into the subject now. Those who take an interest in these poor ill-treated Red Men, will have an opportunity of learning all we know about them ere long. The work will be profusely illustrated throughout, and I hope to have it on sale during the coming summer.

ORNITHOLOGY AND ZOOLOGY

Of the larger vertebrate animals, and for that matter, all terrestrial forms of life, Newfoundland is singularly deficient in comparison to Continental America, or even to the nearest provinces of the St. Lawrence Gulf. This is still more observant in regard to bird life, and it is rather remarkable that many which annually visit Nova Scotia and Cape Breton, or even Labrador, do not find their way here. It is not the scarcity of food that keeps them away, for there is an abundance of insect life in summertime, and wild fruits in Autumn. The country seems particularly adapted to some species of birds, such for instance as the wood-cock, yet this bird never visits our shores, though its congener, the Snipe, does so in considerable numbers, every season.

Yet, notwithstanding the paucity of birds in Newfoundland there is a sufficient number, to render the study and classification of those most interesting members of the Creation, a pursuit which possesses many attractive features.

The Song of Birds.

Who amongst us has not had his or her heart gladdened by the melodious song of the robin thrush, the sweet harbinger of spring, on his arrival here in the early days of April? Later on the loud harmonious note of the fox-sparrow, as we call him the "Foxy Tom," and many other sweet songsters, enliven the woods with joyous melodies tending to make life a more pleasurable gift to mankind.

It was no doubt the song of the birds which gave inspiration to Pan, the God of shepherds and patron of fishing and fowling, in fashioning his Pandian pipes, the most primitive of all musical instruments. The Poetess, Mrs. Browning, in her own inimitable style, thus sweetly versifies the fabrication of this instrument.

"He tore out a reed, the Great God Pan,
From the deep cool bed of the river.
The limpid water turbidly ran,
And the broken lilies a-dying lay,
And the dragon-fly had fled away,
Ere he brought it out of the river.

"This is the way, laughed the Great God Pan,
(Laughed while he sate by the river)
The only way since Gods began
To make sweet music, they could succeed,
Then dropping his mouth to a hole in the reed
He blew in power by the river.

"Sweet, Sweet, Sweet O Pan
Piercing sweet by the river!
Blinding sweet, O Great good Pan!
The sun on the hill forgot to die,
And the lilies revived, and the dragon-fly
Came back to dream on the river."

Newfoundland was at one time, par excellence, the home of the now extinct Great Auk. This large sea fowl possessed attributes of historic importance, for it became at a very early period in our history an object of attention to the explorers and fishermen frequenting our shores. Its presence in great numbers on the Grand Banks was a sure indication of the approach to land, as well as of the presence of large bodies of fish, upon which it fed. The great birds frequented the outlying rocks and islets of our coast, such as the Penguins, the Funk Island, and several others; these were their breeding grounds, and during the season of incubation, they assembled in vast numbers upon those isolated rocks, to deposit their eggs, etc.

The very earliest maps of these regions show that the islets were well known. On most of these, the Isola della Uchelli of the Italian Navigators, or Isle Oiseau of the French, clearly mark the Funks of to-day. Thither all the fishing ships resorted on ar-

rival in our waters, to procure a supply of fresh meat and eggs for their voyage. This practice was kept up every season by our more modern Labrador fishers, who would give the islands a call on their way to the northern fishing grounds.

The Great Auk was unable to fly owing to the shortness of its wing appendages, which latter were destitute of long feathers, and were used more as paddles for propulsion, both on the surface and beneath the waters, hence on land the birds became an easy prey to the fishermen, who killed them in great numbers. It is related that these fishermen sometimes built pens or enclosures with walls of loose stones, into which they drove the poor brutes like sheep. Owing to their inability to rise in flight they were unable to effect their escape and hence became easy victims. Some authors state that boats were occasionally laid alongside the rocks, and a platform or gangway formed of the splitting tables, from the ledges to the gunwales of the craft, over which the birds were forced to travel, when they fell into the boats and were there despatched. It is not to be wondered at, under the circumstances, that the great, clumsy, awkward bird was soon decimated, and finally became extinct.

To-day there are not more than twenty or thirty specimens of the Great Auk to be found in the museums of Europe and America. The possession of one of those birds, or even an egg of one, would be quite a prize, and their money value considerable. Owing to its peculiar flipper-like wings, with short thick pin-feathers thereon, it was called the Penguin (pin or pen-wing) (**Alca. impennis**), but it is not the same bird as the true penguin of the southern ocean, which is still existent in many places. The difference was chiefly in the beak; that of the Great Auk was short and stout, somewhat like the Puffins, the Penguin's being long, narrow and sharp pointed.

It would take too long to attempt a full description of all our birds to-night, even were I fully acquainted with them, which is not the case. I shall merely refer to the most interesting species in a general way under their scientific classifications. Of the indigenous birds, those which remain with us throughout the year, there are in reality very few, and there are still fewer winter visitants not more than twenty of the former, and nine or ten of the latter. Amongst the former we have two species of grouse or Ptarmigan, The Willow Grouse (**Lagopus albus**) and the Rock Partridge, or true Ptarmigan, (**Lagopus rupestris**); five species of Wood-pecker, (**Picidae**), one Wren (the Winter Wren); two species of Titmice (**Paridae**), the Black capped and Hudsonian Tit or Chickadee. Of the Finches, (**Fringillidae**) we have four species; the Pine Grosbeak, the American, and the White-winged Crossbeak, and the mealy Redpoll. To the **Corvidae** or Crow family, belong the American Raven and the Canada Jay. Only one of the Gull family, (**Laridae**) the Kittiwake, called here the Tickdace, as far as I know, remains, all winter.

The winter migrants consist of the Greenland Gyr Falcon, the Snowy Owl, the Hawk Owl, and the pretty Snow Bunting, (**Plectrophanes nivalis.**)

Of the **Anatidae** or Duck family, we have the following winter visitants: Long-tailed Duck, American Scoter, Sleepy Diver, American Eider duck and the King Eider.

The migratory birds, which only visit this country during summer, include several species of Hawks, (**Falconidae**) and Owls, (**Strigidae**), a few Swifts, (**Cypselidae**), one Kingfisher, (**Alcedinidae**), about half a dozen Thrushes, (**Turdidae**), at least twenty Warblers, (**Sylvicolidae**). Of the Swallows, (**Hirundinidae**) about six varieties, Shrikes (**Laniidae**) two, Creepers, (**Certhiiadae**) two, Finches (**Fringillidae**) about ten,

Black birds (**Icteridae**) two, Crows (**Corvidae**) two, Bittern (**Ardeidae**) one, Turnstone (**Haematopodidae**) one, Gale Gird (**Phalaropodidae**) one, Snipe (**Scolopacidae**) twenty-six, of Ducks or water fowl, (**Anatidae**) seven or eight, Gulls (**Laridae**) sixteen or twenty, Gannet, (**Sulidae**) one, Divers (**Colymbidae**) there are two or three. Of the Auks (**Alcidae**), besides the extinct Great Auk or Penguin already mentioned, we have the Razor Billed Auk, and Puffin, three Guillemots and the Little Auk or Bull Bird. The Petrels (**Procellariidae**) include the Hagdown or Greater Shearwater, the Stormy Petrel or Mother Cary's chicken, and probably a few others.

How many unrecorded species of the feathered tribe there may be, I am not prepared to say, as we have no definite information on this head.

It may prove of interest to tell you that our Great Whiteheaded Eagle, (**Haliaetus leucocephalus**) called by our people the grepe, is the bird chosen as the emblem of the United States. This bird does not bear a very savoury reputation, and old Benjamin Franklin was not at all pleased with its selection. He describes it as a "piratical parasite of the Osprey" or fishing Eagle, (**Pandion haliaetus**) which latter is also a summer visitant. The bird lives entirely on fish, which it obtains by diving from a height, plunging beneath the water, and seizing the fish in its beak or talons. It possesses extraordinary powers of vision, and can observe from a great height a fish swimming beneath the surface. I have frequently seen one poised high in the air, circling around almost beyond vision, then suddenly swoop down like a bolt from the heavens straight into the waters. I have been so close at times, as to have been startled by the noise produced by its headlong plunge. It rarely misses its prey but is seen emerging with a fish in its claws, shaking the water from its feathers, and then winging its

flight away to its nest, located upon the top of some lofty pine tree in the distant forest. The Osprey is called "the most industrious fisherman," and I suggested it long ago as a suitable emblem for Newfoundland.

The Greater Whiteheaded Eagle, which will not dive beneath the water to fish for himself, has been known to watch the poor Osprey, and the moment the latter emerged with his quarry, to pounce upon him, and compel him to drop it, then appropriate the ill-gotten morsel. It is on this account the name pirate is applied to him.

Occasionally rare stragglers find their way to our shores, and their presence here is of much interest to ornithologists, for instance, a few years ago, Mr Wm. Clapp, M.H.A., killed a European Crested Lapwing near Quitty Vitty. As far as I can ascertain this is the only specimen ever recorded on the American Continent. One was however, procured in Greenland some years ago. How a bird whose wings and general construction are only adapted for short flight, found its way to our shores is a mystery.

Other stragglers that have been noted from time to time, are two or three Herons, Coots, Rails. The beautiful Carolina Mourning Dove, a white Egret, a few Grebes, and a Turkey Buzzard.

MAMMALIA.

Of the Quadrupeds or four footed animals we have comparatively few, as contrasted with the main Continent, yet those few are perhaps the finest of their kind.

Cervidae, the Deer Family.

You are all pretty well acquainted with the lordly Caribou or Reindeer indigenous to this island. It is contended by some authorities that we have two

varieties, viz., the Woodland and the Barren Ground Caribou. But I am not at all clear on this head. My observation leads me to think they are both the same animal, in different stages of growth, or perhaps the one, owing to its environment, has not developed to such an extent as the other. The former is decidedly the finer animal, and for that matter, the finest of its species. Here in Newfoundland it grows to a large size, with a great development of Antlers, unexcelled anywhere in the world. The pursuit of this animal has attracted many sportsmen to our island of late years. The magnificent head adornment of our Caribou forms one of the most coveted trophies of the chase. On account of its grand, widely palmated antlers, our Caribou has been given the distinctive title of "Rangifer Terranovae."

The so-called Barren ground Caribou is of smaller size with slighter though wide spreading bays to its antlers. It is the variety which inhabits the Labrador peninsula and Arctic Islands of the American Continent, and is almost identical with the Lapland Reindeer.

What distinguishes these animals from other members of the Cervidae, is the fact that the female or doe usually, but not always, carries antlers as well as the male. No other member of the deer family does so.

The Reindeer is one of the oldest animals in existence to-day. It was a contemporary of the long extinct Mammoth, and their remains are found together in the northern parts of Siberia.

In prehistoric times, it would appear to have formed the principal food of the earliest human dwellers on our earth, the cave men. For, not only are its bones, sometimes charred by fire, found in the caves where those humans dwelt, but it is figured by means

of rude etchings on the tusks of the mammoths and even on bones of the deer itself. The Caribou would appear to have found their way to this island at a time when it was still connected with the mainland at the Straits of Belle Isle. It was no doubt the removal of the land barrier which once formed a bridge as it were, between the two lands, that prevented many other animals, conspicuous by their absence, from crossing over.

The Great Boreal Deer, the Moose (**Alces Malchis**) does not appear to have arrived on the scene time enough to effect a crossing before the connecting bridge was demolished, hence he had no existence here, though the country is well adapted to him. You are aware that of late we have been endeavouring to introduce this fine animal. Some thirty-five years ago two young moose, male and female, were obtained from Nova Scotia, and placed at Gander Bay. Nothing definite was heard of them till one was killed on the Gander River a few months ago. This animal was a male or Bull of about five or six years of age, and was undoubtedly one of the offspring of the original two.

At a later period, in 1904, four more Moose, two males and two females were introduced from New Brunswick and placed out near the Grand Lake They, or at least some of them, have been seen occasionally since then, and there need now be no question of the country's adaptability to the animal. It is to be hoped the experiment will be followed up, and more Moose introduced, when we would soon be in possession of a herd or herds of this noble animal, thus affording still greater inducement to outside sportsmen to visit our country.

I might here say that were some persons to take up the introduction of other animals, especially fur bearing ones, suitable to our climate, I think it would be an experiment worth trying.

Canidae, the Dog Family.

Perhaps the rarest animal in this country to-day is the so-called Newfoundland Dog. The origin of this noble animal is shrouded in mystery. Nobody seems to be able to determine whence he came or how he obtained his distinctive appellation, and I shall not attempt a solution of the problem now. My own impression is that he certainly was not an indigenous product of our island originally, but must have been introduced by some of the earlier navigators or fishermen from foreign parts.

Most authorities assert that the Aboriginal Beothucks or Red Indians did not possess dogs of any kind. Cartwright, who penetrated to Red Indian Lake as early as 1768 in search of the Indians, is quite positive they had no dogs, and laments the fact in his account of his journey. He says, speaking of the Indians, "To complete their wretched condition, Providence has even denied them the pleasing services and companionship of the faithful dog."

Buchan who visited the Aborigines in 1810, does not mention seeing any such animal with them, and Mr. Peyton who captured Mary March on Red Indian Lake in 1819, and with his men, actually spent a night in one of their wigwams, often assured me they had no dogs. Yet, on the other hand, old Capt. Richard Whitbourne writing in 1620, makes frequent mention, not of their dogs, but of their wolves, which says he, "they were in the habit of marking in the ears as we do our sheep."

The only conclusion to arrive at appears to be, that at first they really did possess that wolfish Labrador animal, or Eskimo dog, but that later on, when hemmed in on all sides by White and Micmac enemies, and having no further use for the animal, they destroyed him. Perhaps they were forced through

hunger to make use of their dogs for food, but I think it more probable that as his presence was apt to betray their whereabouts to their enemies, either by his footprints in the snow, or by his howlings at night, it became a matter of necessity to get rid of him. Whichever may be the true solution, we cannot connect the magnificent Newfoundland dog with these wolfish brutes.

The wolf proper **(Canis Lupus)**, this animal was at one time fairly plentiful in Newfoundland, so much so, and so destructive was he of cattle and sheep, that the Government offered a bounty for his ~~extermination.~~ destruction. The wolf has now almost become extinct, and it is rarely we hear of one being killed. This is all the more remarkable considering that their principal food supply, the Caribou, is certainly on the increase, and has been for several years past. Other sources of food also, such as the American hare or rabbit now abound all over the country.

Possibly some epidemic, such as frequently occurs amongst wild beasts, has carried off the brute almost to the verge of extinction. During my many years of rambling over the interior, I have seen but one wolf, and rarely even any sign of them, such as their footprints in the soft ground on muddy margins of lakes or rivers.

Other members of this family are the Foxes **(Vulpes)** which are quite abundant and of several varieties.

Sub-Family, Ursidae the Bear.

The only member of the Bear family inhabiting Newfoundland, is the Black Bear **(Ursus Americana)**. We can scarcely call the great White or Polar Bear **(Ursus maritimus)** a Newfoundland animal, though he is occasionally met with by our seal-hunters on the

Arctic ice-floe during the sealing voyage, and has also been known, at rare intervals, to effect a landing on our shores. It would even appear as though he may have been an inhabitant at one period, for we have an inlet on our southern sea-board, called White Bear Bay.

It might interest you somewhat to give here some of the peculiar characteristics of our Black Bear. He is a very powerful animal, but not vicious except when wounded. The she Bear, when accompanied by her cubs, is not to be tampered with however. I have known one to chase some young fellows along the R. R. track near Grand Lake, for several miles, and on one occasion even to the very platform of the R. R. station at Howley. When cornered or wounded this Bear will stand upright like a man and defend himself with his fore paws. He is very quick with these weapons of defense, and can strike a powerful blow with them. In fact, he is a dangerous customer at such times.

I presume you are all acquainted with the hibernating habit of the Black Bear. On the approach of winter he selects some retired spot generally in the dense forest, and having found a large tree with hollow base or thick roots to it, he scoops out a hole beneath with his paws, stops up all interstices with sticks and moss, and lines the inside with young fir branches to make his bed. He then collects a large supply of Dog berries, and other wild fruits, which he carries in his mouth and deposits close to his abode. This store he uses as a sort of reserve supply of food, which he only avails of, should mild weather occur during the season, when occasionally he will come out to feed.

Should the winter prove a severe one he will retire to his den, make all secure, and coil himself up like a dog, there to pass away the time in a state of

semi-somnolence, until the warm weather of spring approaches. During this period of hibernation, he sustains himself on the fat which he has accumulated during the summer and autumn.

While this bear will feed on animal flesh, fish offal, or any such like when he can procure it, yet, to a large extent, his food consists of berries and insects. He is very partial to sweet things, and will rifle a bee hive whenever he can find one, and rob the honey. He is rather daring in his depredations at times, and has been known to break open the camps of the lumbermen, where provisions were stored, and during their absence, devour or destroy a lot of food.

I once had a little experience of this kind myself in Port au Port Bay. Leaving a camp standing, with most of our stock of provisions, near the mouth of Serpentine River, we travelled up country on foot, and were away about a week. When we returned, we found Master Bruin had paid a visit to our camp, and played havoc with our provisions. There was a flour barrel inside filled with odds and ends; tea, sugar, flour, beans, soap, candles, etc., etc. This, he carried bodily out of doors and upset, he then made love to all the delicacies, which he pawed over, and eating such as he cared for, mixed the remainder up making an indescribable mess. There was also a canvas bag containing some pork, in the camp. This he carried up on a hill behind, tore the bottom out of it, and devoured the contents. We had a keg of molasses placed in the river to prevent the wood from shrinking, but he missed that. I did not think he could get at its contents, as the keg was a strong oaken, iron bound one, but my Indians assured me, had he found it, this would not deter him. They said he would lift the keg in his fore paws and dash it down on the boulders till he succeeded in bursting it asunder.

A few years ago I was at a place in Placentia Bay,

called Clatise, where the people had lost several sheep, and believed it to be the work of a Lynx. They then housed the sheep in a strongly built log shanty. Next morning they found the roof turn off, and fourteen fine animals destroyed. It was the work of Master Bruin, whom they afterwards succeeded in trapping.

Felidae, the Cat Family.

The only member of this family in Newfoundland is the Canada Lynx (**Lynx Canadensis**), which does not appear to have been originally an inhabitant of our island. Its presence here only dates back some twenty or thirty years, previous to that time it was unknown. It is supposed to have found its way across the Straits of Belle Isle from Labrador, on the ice. It is a nasty brute, very cat-like in appearance, and propensities. In fact it is nothing more or less than a great wild cat.

Mustelidae, the Weasel Family.

Of this important fur bearing family our only representatives are the Pine Marten (**Martes abietum**) so valuable for its beautiful fur, and the common Weasel (**Mustela vulgaris**). Some persons contend that our weasel is the Ermine, because, like the latter it changes its coat in winter and assumes a pure white one, with the exception of the very tip of the tail which remains black. Possibly, it may prove to be the Ermine, but that is a point not yet determined; it certainly resembles it very much, and apparently should prove just as valuable for its fur. Of course it is well known that the skin of the Ermine is exceedingly valuable. It is this fur that is assumed by Royalty and high dignitaries in Church and State. It also figures in Heraldry as one of the furs used in blazonry, represented by a field argent, with small spots sable on a shield.

It is rather singular that in Newfoundland, so

well adapted as it is to such animals, most of the continental varieties of this family are entirely absent, such as the Mink, the Skunk, the Badger, the Wolverine, the Sable, the Fisher, etc

Of the sub-family (**Lutrinea**) the Otters, we have two varieties, the so-called Sea Otter or salt water Otter, and Land Otter (**Lutra Canadensis**). These are acquatic in their habits, and are entirely piciverous or fish eating animals, as distinguished from the other members of the family which are generally carnivorous.

The Salt water Otter is considerably larger than the inland variety, but the fur, as a rule, is not so good, being coarser, and often rusty coloured; whereas the fur of the other is a rich uniform dark brown, sometimes nearly black. Otters generally inhabit rocky portions of the seacoast, where the crevices in the broken cliffs afford them ample concealment. The inland or country Otter frequents the streams and lakes, especially where trout abound, these being his favourite food. Their presence is usually recognized by what is termed their slides, or rubs, that is a sort of path leading from the waters edge into the woods.

The animal usually adopts a sliding or coasting motion on approaching the water, and by constantly using the same slide, wears away the moss or earth so as to leave a bare pathway.

Muridae, the Rat Family.

The Brown or Norwegian Rat (**Mus decumanus**), that pest of our stores and houses, was undoubtedly introduced from Europe long ago, as well as the mischievous little mouse (**Mus musculus**). Presumably, they were first brought here by fishing vessels from the old countries, and finding the climate congenial,

and food abundant, rapidly spread in all directions.

We have an innocent, harmless little animal called the field mouse (**Arvicolo arvalis**) which is probably indigenous.

Leporidae, the Hare Family.

Our splendid Arctic Hare (**Lepus Arcticus** or borealis)), once fairly plentiful is now becoming quite rare. I believe the introduction here of the smaller American varying Hare or Rabbit (**Lepus Americanus**), has done much to bring about the result. The latter is so prolific and of such a pugnaceous disposition, that he has driven out the more timid native animal, and ursurped his territory.

Castoridae, the Beaver Family.

The Beaver in point of interest, comes next to the seal. He is an amphibious animal, but is more acquatic in his habits than otherwise. He also belongs to the rodents, or gnawers. He is furnished with four powerful chisel-shaped front teeth, (incisors) which enable him to cut or gnaw off trees and shrubs, which form his principal food. Birch trees seem to be his favourite diet, that is the inner bark of the tree, but he will also eat that of the spruce, fir, aspen, alder, or any others of our forest growth. He is very partial to the leaves, stalks and roots of the pond lily. His usual habitat is in the ponds and small muddy brooks, where he builds his house of sticks and sods. This is a most ingenius construction, and often attains considerable proportions. It is usually situated on the shore of a lake or river where the water is deep. On the front, or water side, there are generally two or more openings or passage-ways for ingress and egress, leading out under water. Internally, there are two or more apartments raised just above the water level. One of these, the outer one, is used for rolling and drying himself after returning from his

forage. The other is his sleeping apartment, which is clean and cosy. He forms his bed of fine shavings gnawed from the wood of the trees he feeds upon.

When the water in a brook is not sufficiently deep, he constructs one or more dams across it with the utmost skill, thus raising it to the required depth. In the construction of both his house and dam the Beaver exhibits an astonishing amount of engineering skill. He will rarely build the latter straight across a stream, nor yet with a curve downwards, but almost invariably with its convex side facing up stream. This is to prevent its being carried away during freshets. Of course when the pressure of the water comes against the dam, its effect is to tighten the mass, and thereby enable it the better to resist the strain, which otherwise would carry away the structure.

The Indians, who are such close observers of nature, tell some extraordinary tales of the beaver's ingenuity. They say that in constructing the dam the animal first carries a number of sticks or branches of trees, to the spot, and forces them endwise into the mud at the bottom. They have watched them dive with a stick and prod it down in the mud as we stick peas. They next accumulate a number of other sticks, lay them along, and weigh them down with sods and stones. When the dam begins to show above water, they have been observed standing up at one end and surveying their work, or casting their eyes along the surface as if to see whether it possessed the requisite curvature.

In felling a large tree in the forest they display remarkable foresight. Invariably they manage to fell the tree so that it will clear the other standing timber, in coming down to the ground. Even our most experienced woodsmen cannot always do this successfully. When the tree is down, they gnaw off all the

smaller limbs, which they then transport to their camps by dragging them along with their teeth. Once in the water, they swim with their burden easily enough, taking care always to catch the limb by its larger end, allowing the branches to trail behind.

On the approach of winter they accumulate a large amount of material for food, and place it just outside the entrance to their houses, keeping it in position by other sticks and weights. This is to provide a supply for winter use when the ponds and rivers are all frozen over. They then dive out under, lop off a junk, and bring it inside to make a meal from, which they do by pealing off the outer skin and eating the inner, more succulent bark. When the junk is cleaned of all its bark it is carried outside again.

So wonderful is the instinct of the beaver, that he would seem almost to possess the reasoning powers of a human being. He appears amongst other things to possess the power of forecasting the weather, and the surest indication of a severe or mild winter, is the amount of provender, termed brouse, he may have stored up for use during that period.

In many other respects the Beaver displays an astonishing amount of sagacity. It has frequently occurred to me that the cunning attributed to the Fox is misplaced; it belongs more properly to the Beaver. His sense of smell and hearing are extremely acute, but his sight is not as keen. Although such a knowing animal, he can nevertheless, when not frightened, be easily outwitted by man. The Indian hunter can call, or toll him within a few yards of his gun, so long as the animal has not heard or winded him. He can even call him out of his house at midday. The Beaver is decidedly nocturnal in his habits, doing most of his work at night-time, and seldom leaving his abode during daylight, except at early dawn, or in the evening twilight.

The habit of calling or tolling wild animals is practiced by the Indians to a great extent, and that is where they excel as hunters. An Indian can imitate any animal, by uttering sounds similar to those of the particular one he is in pursuit of, and thus entice it within shooting distance.

The only other member of the Castoridae in Newfoundland, is the well known Muskrat (Fiber Zibethicus). He needs no description as he is familiar to everyone who takes a stroll near the margin of our lakes and ponds during summertime.

His habits and mode of life are very similar to those of the beaver, his elder brother or cousin, as the Indians call him. He feeds much in the same way, but is not able to fell such large trees, contenting himself with twigs and lilly pads. He sometimes constructs a house of grass and weeds, somewhat similar to that of the Beaver, but more often contents himself with a hole or burrow dug into the soft banks of the streams he frequents.

I am happy to say the valuable and interesting Beaver, which a few years ago was in danger of being exterminated, has of late, owing to wise legislation, which prohibited the killing for a term of years, begun to increase again rapidly.

Phocidae, the Seal Family.

The animals of this family are of course most interesting to all Newfoundlanders. It is the pursuit of these ice riding pinnipeds which constitutes our great annual Seal hunt, or sealing voyage. I need not delay you by describing this so called seal fishery. Of course it is scarcely necessary to tell you that this term is altogether a misnomer. The seal is in no sense a fish, but a warm blooded mammalian, while the true fish is a cold blooded animal.

It is extraordinary, notwithstanding the fact that we have been slaughtering these seals for fully two centuries, that we know comparatively little to-day, of their Natural History. I don't believe ten persons in Newfoundland can tell with certainty, how many different varieties of seals we have on our coasts, or can afford any really authentic information about their habits and peregrinations, much less classify them in a scientific manner. It would no doubt be considered presumption on my part to pretend to know more about our seals and their movements than old and experienced ice-hunters. Yet, I must confess it seems to me a blot on our intelligence, that at this late date when the sealing industry shows signs of fast becoming a thing of the past, that we really know so very little about them.

It is true most people can call them by their common or local names, such as the Harp, the Hood, the Square Flipper, the Harbour or Bay Seal, etc., but these are not their scientific names. The Harp is the Greenland seal, (**Phoca Greenlandica**); the Hood, (**Stemmatopus cristatus**) so called from that peculiar appendage on the top of the head of the male, which he can inflate at will so as to form a protective cap or shield. Its resemblance to a hood has given rise to his name, the "Hooded Seal." It is said that when attacked, this seal inflates his hood, which then becomes such a perfect safeguard to his head that it is useless to try and kill him in the ordinary manner by a blow from a gaff or club. The gaff rebounds from it like a drum stick from the head of a drum, without injuring the animal. It is even claimed that shot fired from a gun will glance off instead of penetrating it.

The male hood is a very vicious animal, and for such a huge clumsy one, exceedingly nimble. It takes two or three men to despatch one, and they have to be very careful he does not catch them, as he has been

known sometimes to severely lacerate the hunter. The only way to kill one is to try and get a blow at his throat. This is accomplished by one person striking him behind, when he will jump quickly around to face his enemy and raise up his head, then a second man seizes the opportunity, while his throat and neck are exposed, to strike a hard blow under the chin. Even so, it sometimes takes quite a while to vanquish him. The so-called Square flipper is the largest of the seal family in our waters. It sometimes grows to an enormous size. His correct name is the Bearded seal (**Phoca barbata**). It is becoming very rare now-a-days, though it is difficult to account for this fact, as very few of them are ever killed. Another large seal which inhabits the Gulf of St. Lawrence but does not appear on the Eastern sea-board of our island is known as the Horse head (**Halichoerus Grypus**). Our ice hunters know literally nothing of this animal, and are in the habit of confounding him with the Greenland or Harp seal, because like the latter the young when first brought to the world are clothed in a soft white coat of fur. But it is a larger animal than the harp and entirely different in its habits.

The common Bay or shore seal (**Phoca vitulina**) is that prettily marked or spotted animal which is to be seen almost anywhere during summertime. This is the seal which frequents the bays and estuaries, and ascends the rivers for long distances in pursuit of salmon and sea trout. I have seen them fully 100 miles or more in the interior They are great poachers, and will rob the fishermen's salmon nets under their very noses.

There is another variety of seal sometimes found on the ice floes, and I believe common on the Labrador and further north, to which I can find no reference in any work on Natural history. It is a small short thick bodied animal, with a head and snout

more like a dog's than the others. Its skin is prettily marked by roundish white rings with a dark central spot in the white. It is known to our sealers as the Jar,* presumably from the resemblance it bears in outline to that article. It has a short, stout, almost round body, tapering towards the hinder part. Another seal is called the Ginny by our people, but whether it is a variety of the last, or a different species, I do not know. Some say the Ginny is a deformed or hard grown Harp, one that has lost its mother and is not properly nourished, but this appears to be merely conjecture.

Possibly, there are still other varieties of the Phocidae on our coasts, but if so they are unknown to me. It certainly does not speak well for us that we have not long ago made an effort to fully study this most interesting group of animals and learn all that there is to be learned about them, ere it be too late.

The Walrus or morse, closely allied to the seal family is sometimes, but rarely found on the Arctic ice floe in these latitudes. His proper habitat is in the Arctic regions, and he but seldom comes so far south as Newfoundland.

Of course all our seals are an entirely different species from the fur seal of the Prybilov Islands in Bhering Sea, on the West coast of the American continent. This latter animal, which furnishes the valuable seal fur so dear to the hearts of all our lady friends, never makes his appearance on this side, I

*Since writing the above I submitted photos, together with an accurate description of this seal, to the authorities of the Smithsonian Institute, Washington, D. C., for identification. They informed me that the correct name of the animal is the Ringed Seal, Phoca hispida orfotidae. I have also ascertained that it is the same seal from which most of the Eskimo skin boots and clothing are made.

presume the ice laden Arctic Ocean forms an effectual barrier, and the journey around Cape Horn too long a one. Possibly, this seal might be introduced from the Pacific, and become a great source of wealth for our people in time to come.

I fear I have taken up rather too much of your time on the subject of the seal, yet it is one of such deep interest to us all, that I feel you will excuse me.

Cetacea, the Whale Family.

Amongst the salt water mammals, the Whale holds first place. Although we possess a large Whaling industry here, I doubt whether anyone of us knows how many varieties of this huge cetacean frequent our seas, or what are their chief characteristics.

Of the (Ballanidae) or true Whales, best known to our people, there are the Hump, the Sulphur Bottom, the Sperm, the Fin Back, and in the St. Lawrence Gulf, the White Whale.

In the closely related sub-family, **(Delphinidae)**, there are the Dolphin, the Orc, the Porpoise, Black Fish, Round Head, Herring Hog, or Puffing Pig, and several others not identified. It is not improbable that the Whales also will become extinct before we know all about them.

ITCHYOLOGY, FISH LIFE.

It would be preposterous for me even to attempt a description of the abundant fish life of our sea and inland waters, even were I competent to deal with this phase of our Natural History. I might almost say that we really know very little of our fish beyond the fact that our waters produce in vast abundance, Cod, Herring, Salmon, and other staple products of the great ocean. But there are thousands of fishes and other sea animals around our shores which have never received any attention, many of these also are of an edible character.

Selachii, the Shark Family.

We do not appear to have many varieties of Sharks in our waters, certainly not any really dangerous ones, such as the man eater. There are some smaller species, especially that pest of the fishermen, the Dog fish, while the Thrasher shark is occasionally seen. The Ray (or as our people term it the Maiden Ray) is fairly plentiful. I shall not attempt to name all the other fish in our waters, even if I knew them all. Most of the commoner varieties are well known to you already, but we have still much to learn about others. I shall merely at present, give a list of the families under which our fish come, viz., **(Gadidae)**, the Cod family. **(Pleuronectidae)**, the Flounder or flat fish. **(Salmonidae)**, the well known salmon, trout, caplin, smelts, etc. **(Clupaeidae)**, the Herring family, abundant on our coasts, **(Scomberidae)** the Mackerel family, which includes the common Mackerel, the Horse Mackerel or Tuney, and the Sword fish **(Xiphias)**.

(Muraenidae) Eel family. There are salt and fresh water Eels, how many varieties I cannot say. **(Fustularidae)**, Pipe nosed fish, include the Bill fish, Sea trumpet or Bellow fish. There are many other less known fish, such as the Gurnards, Sea-bream, Wolf fish, Cat fish, Angler fish, Lump fish, Sturgeon, Sculpin, Connor, or perch, and a host of others.

Crustacea.

The crustaceans, include the Lobster, Crab, Star fish Sea Urchins and several others.

Mollusca.

The Mollusca, or soft bodied fish include the Squid, and the huge Decapod, or Devil fish.

Conchology.

The Conchology or Shell fish life of our waters

has been pretty well studied by a German Professor, T. A. Verkruzen, some years ago. This gentleman spent two or three seasons dredging the sea bottom around our coast, and made a large collection of choncological specimens, which he arranged and classified, kindly presenting the Museum with a duplicate set, which is very complete, and neatly arranged.

ENTOMOLOGY.

There has been no attempt to make a systematic collection of the Entomological, or insect life of the country, yet this is a subject which offers much of beauty and much of interest. I should very much like to see some one take the matter up. The collection of butterflies and beetles in particular would afford a pleasing pastime during the summer months

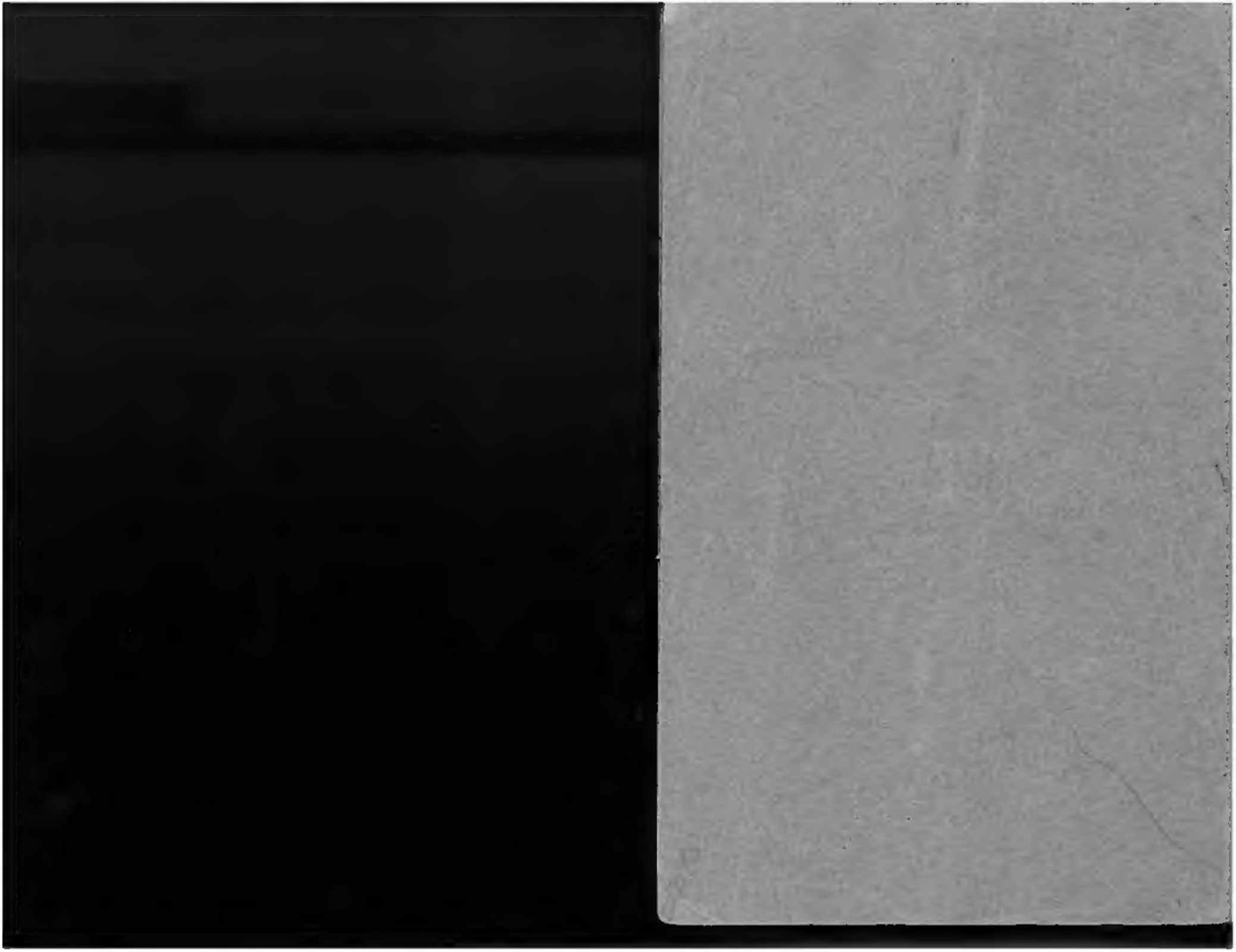
OOLOGY.

Oology is the collection and classification of the eggs of our wild birds, both indigenous and migratory. It is well worthy the attention of some of our youth of either sex. Some years ago while at the Smithsonian Institute, Washington, I saw a large collection of eggs, filling one spacious room. It was in charge of a young lady who seemed absorbed in her work. She knew the egg of every bird and just where to lay her hand upon it. They were all beautifully arranged and classified. When asked for the egg of any particular bird by its local or common name, she could tell little about it. But the moment one gave the scientific name, she would at once point out the egg of the particular species, and tell all about the bird and its nesting habits.

So you see Ladies and gentlemen, there is much work to be done here in Newfoundland, of an elevating and valuable scientific character. Work, which should give the utmost pleasure to those who would enter upon it, and at the same time be a great addi-

tion to our knowledge of the Natural History of our island. The efforts of a few would become object lessons for the many, and in a short time tend to remove that ignorance of our fauna and flora which unhappily exists, and which is nothing more or less than a blot upon our intelligence.

When we consider that in this great fish country, where fish has formed the staple article of export for generations, we really know so little of the fish life in our waters, except perhaps that of the commonplace Cod, Herring and Salmon it does not redound to our credit in this age of scientific research.

While I fear this lecture has been rather long and dry for most tastes, I still hope it may prove an incentive to some few present to devote a little of their leisure to making collections during the summer time and depositing duplicates in the Museum for the benefit of the public.

I trust, ladies and gentlemen, my prolixity has not become insufferably wearisome to you all: but let no one suppose that the pursuit of Natural History, even in its most insignificant specialties is mean trivial, or unimportant. The discovery of the smallest or lowest form of existence, or any peculiarity of organization, is a step in advance in the cause of science, and the pursuit of all scientific investigation is an endeavour to arrive at the truth.